

# Work Order ID 132270

Tuesday, May 05, 2015 10:04:44 AM

**\*132270\***

Page 1

Item ID: D407-667-205TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop **\*NS2\***

Start Date: 5/5/2015 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 5/5/2015 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: MLS Date: MAY 05 2015 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr                       | Revision Nbr             |                      |         |        |              |               |               |                  |                |
| D407-667-245                   | Rev <u>YG</u>            |                      |         |        |              |               |               |                  |                |

100

0.00

**\*100\***

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8531 on both ends as per Folio FA248

2-Turn first side as per Folio FA248

3-Blend transition lines only, \*\*do not sand whole tube\*\*:

FOLIO REV: AA

DWG REV: 6

\*Use mill bastard file, brush file repeatedly with file card.

\*Do not use sandpaper coarser than 320 grit.

1 Ø  
mm L  
15/05/11

110

QC1- Inspection performed by CMM

0.00

**\*110\***

QC

Memo

0.00

Quality Control

1 Ø  
mm L  
15/05/11

**Work Order ID 132270**

Tuesday, May 05, 2015 10:04:44 AM

**\*132270\***

Page 2

Item ID: D407-667-205TRN

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 5/5/2015 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 5/5/2015 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

120

**\*120\***

Mori Seiki

Mori Seiki CNC Lathe Large

MORI SEIKI CNC LATHE LARGE

Memo

1-Turn second side as per Folio FA248

2-Blend transition lines only, \*\*do not sand whole tube\*\*:

\*Use mill bastard file, brush file repeatedly with file card.

\*Do not use sandpaper coarser than 320 grit.

FOLIO REV: AADWG REV: 6

3-Remove sand and plugs

4-Scribe part # and batch # using vibrating stylus as per Dwg D407-667-245

0.00

0.00

130

**\*130\***

QC

Quality Control

QC1- Inspection performed by CMM

Memo

0.00

0.00

1  $\emptyset$  \_\_\_\_\_  
mmL  
15/05/12

1  $\emptyset$  \_\_\_\_\_  
mmL  
15/05/13

# Work Order ID 132270

**\*132270\***

Page 3

Tuesday, May 05, 2015 10:04:44 AM

Item ID: D407-667-205TRN Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Crosstube Turning Detail  
 Start Date: 5/5/2015 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 5/5/2015 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                  | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|-----------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140                            | QC8- Inspect parts - second check                         | 0.00                 |         |        |              | 1             | 8             |                  | DAS<br>47      |
| <b>*140*</b>                   |                                                           |                      |         |        |              |               |               |                  | 9-89           |
| QC                             | Memo                                                      | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |                                                           |                      |         |        |              |               |               |                  | 15-05-13       |
| 145                            |                                                           | 0.00                 |         |        |              |               |               |                  |                |
| <b>*145*</b>                   |                                                           |                      |         |        |              |               |               |                  |                |
| Crosstubes                     | Memo                                                      | 0.00                 |         |        |              |               |               |                  | JW 15-05-14    |
| Crosstubes                     | Grind off circumferential machining marks longitudinally. |                      |         |        |              |               |               |                  |                |
| 150                            |                                                           | 0.00                 |         |        |              |               |               |                  |                |
| <b>*150*</b>                   |                                                           |                      |         |        |              |               |               |                  |                |
| HandFXtube                     | Memo                                                      | 0.00                 |         |        |              |               |               |                  | BLW 15/05/20   |
| Hand Finishing Crosstubes      | 1- PRESSURE WASH X-TUBE INSIDE AND OUT                    |                      |         |        |              |               |               |                  |                |
|                                | 2- ACID ETCH X-TUBE INSIDE AND OUT. USE RED SCOTCH BRITE  |                      |         |        |              |               |               |                  |                |

# Work Order ID 132270

Tuesday, May 05, 2015 10:04:44 AM

**\*132270\***

Page 4

Item ID: D407-667-205TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop **\*NS2\***

Start Date: 5/5/2015 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 5/5/2015 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                      | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|-----------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 160                            | QC5- Inspect part completeness to step on W/O | 0.00                 |         |        |              |               |               |                  |                |
| <b>*160*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                          | 0.00                 |         |        |              | 1             |               |                  | EB<br>15-05-21 |
| Quality Control                |                                               |                      |         |        |              |               |               |                  |                |
| 170                            | Packaging                                     | 0.00                 |         |        |              |               |               |                  |                |
| <b>*170*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| Packaging                      | Memo                                          | 0.00                 |         |        |              | BL            |               |                  | 15/05/21       |
| Packaging                      | Identify and stock in kanban rackLocation: LG |                      |         |        |              |               |               |                  |                |
| 180                            | QC21- Final Inspection - Work Order Release   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*180*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                          | 0.00                 |         |        |              | MLJ           |               |                  | MAY 21 2015    |
| Quality Control                |                                               |                      |         |        |              |               |               |                  |                |

MLJ MAY 21 2015

# Picklist Print

Tuesday, May 05, 2015 10:04:47 AM

Page 1

Work Order ID: 132270

**\*132270\***

Parent Item: D407-667-205TRN

**\*D407-667-205TRN\***

Parent Item Name: Crosstube Turning Detail

Start Date: 5/5/2015

Required Date: 5/5/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec  
 IPP Rev B 08.04.02 Removed polish EC verified by: DD  
 IPP Rev:C 08-08-19 revE as per dwg DD verified by:EC

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D6011-115                       |                        | Manufactured  | No          |                     |                  | 120             | Each               | 48.0000        | 1           | 1            |               |                |        |

**\*D6011-115\***

Crosstube Material

**\*\***

Location

Loc Qty

Loc Code

LG003

48

107880

22

107881

14

67798

6

75639

6

mmk 15/05/11

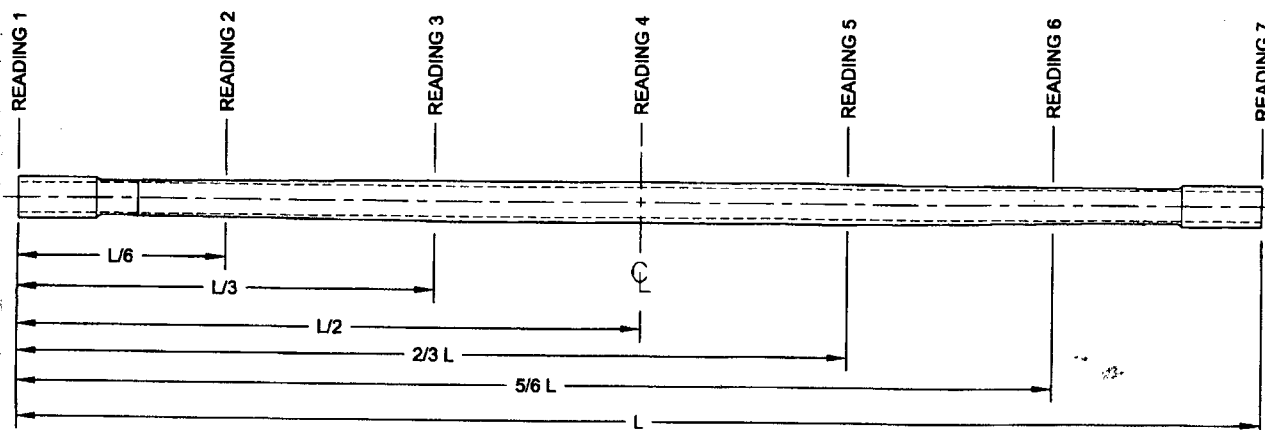
|                                                           |  |                                  |
|-----------------------------------------------------------|--|----------------------------------|
| <b>DART AEROSPACE LTD</b>                                 |  | <b>Work Order:</b> 132270        |
| <b>Description:</b> Crosstube Assembly                    |  | <b>Part Number:</b> D407-667-245 |
| <b>Inspection Dwg:</b> D407-667-245 <b>Rev:</b> <i>PG</i> |  | <b>Page 1 of 2</b>               |

### FIRST ARTICLE INSPECTION CHECKLIST

|        | Inspection Sheet<br>Drawing Dimension | Tolerance     | Actual<br>Dimension | Accept | Reject | Method of<br>Inspection | Comments |
|--------|---------------------------------------|---------------|---------------------|--------|--------|-------------------------|----------|
| SIDE A | 2.490                                 | +0.005/-0.000 | 2.493               | ✓      |        | vern                    | CNC-08   |
|        | 1.832                                 | +0.005/-0.000 | 1.834               | ✓      |        |                         |          |
|        | 1.838                                 | +0.005/-0.000 | 1.841               | ✓      |        |                         |          |
|        | 1.892                                 | +0.005/-0.000 | 1.894               | ✓      |        |                         |          |
|        | 2.052                                 | +0.005/-0.000 | 2.053               | ✓      |        |                         |          |
|        | 2.206                                 | +0.005/-0.000 | 2.208               | ✓      |        |                         |          |
|        | 2.521                                 | +0.005/-0.000 | 2.523               | ✓      |        |                         |          |
|        | 2.633                                 | +0.005/-0.000 | 2.634               | ✓      |        |                         |          |
|        | 4.10                                  | +/-0.030      | 4.100               | ✓      |        |                         |          |
|        | 4.978                                 | +/-0.030      | 4.980               | ✓      |        |                         |          |
|        | 2.040                                 | +0.000/-0.010 | 2.030               | ✓      |        |                         |          |
|        | 0.125                                 | +/-0.010      | .125                | ✓      |        |                         |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        | R 6                     |          |
|        | R0.500                                | +/-0.010      | .500                | ✓      |        | "                       |          |
|        | 2.490                                 | +0.005/-0.000 | 2.491               | ✓      |        | vern                    | CNC-08   |
| SIDE B | 1.832                                 | +0.005/-0.000 | 1.834               | ✓      |        |                         |          |
|        | 1.838                                 | +0.005/-0.000 | 1.840               | ✓      |        |                         |          |
|        | 1.892                                 | +0.005/-0.000 | 1.893               | ✓      |        |                         |          |
|        | 2.052                                 | +0.005/-0.000 | 2.055               | ✓      |        |                         |          |
|        | 2.206                                 | +0.005/-0.000 | 2.209               | ✓      |        |                         |          |
|        | 2.521                                 | +0.005/-0.000 | 2.535               | ✓      |        |                         |          |
|        | 2.633                                 | +0.005/-0.000 | 2.636               | ✓      |        |                         |          |
|        | 4.10                                  | +/-0.030      | 4.10                | ✓      |        |                         |          |
|        | 4.978                                 | +/-0.030      | 4.980               | ✓      |        |                         |          |
|        | 2.040                                 | +0.000/-0.010 | 2.031               | ✓      |        |                         |          |
|        | 0.125                                 | +/-0.010      | .120                | ✓      |        |                         |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        | R 6                     |          |
|        | R0.500                                | +/-0.010      | .500                | ✓      |        | "                       |          |
|        | 112.91                                | +/-0.020      | 112.9               | ✓      |        | tape                    | LG-11    |

|                                                   |  |                                  |
|---------------------------------------------------|--|----------------------------------|
| <b>DART AEROSPACE LTD</b>                         |  | <b>Work Order:</b> 132270        |
| <b>Description:</b> Crosstube Assembly            |  | <b>Part Number:</b> D407-667-245 |
| <b>Inspection Dwg:</b> D407-667-245 <b>Rev:</b> 4 |  | <b>Page 2 of 2</b>               |

### WALL THICKNESS MEASUREMENT



| Location            | WALL THICKNESS MEASUREMENT (IN) |      |      |      | Deviation<br>$\Delta w$<br>(max-min) | TOLERANCE |
|---------------------|---------------------------------|------|------|------|--------------------------------------|-----------|
|                     | w1                              | w2   | w3   | w4   |                                      |           |
| READING 1<br>L= 0"  | .238                            | .237 | .233 | .236 | .005                                 | 0.075"    |
| READING 2<br>L= 19  | .257                            | .257 | .228 | .225 | .032                                 |           |
| READING 3<br>L= 37  | .413                            | .429 | .394 | .374 | .055                                 |           |
| READING 4<br>L= 56  | .660                            | .658 | .633 | .633 | .027                                 |           |
| READING 5<br>L= 75  | .440                            | .426 | .384 | .396 | .051                                 |           |
| READING 6<br>L= 93  | .277                            | .257 | .222 | .235 | .055                                 |           |
| READING 7<br>L= 112 | .237                            | .237 | .235 | .235 | .002                                 |           |

#### Calibration Result

Actual Block Thickness: .100 - .750

Sitiescan 250 Measured Thickness: .100 - .750

DAS

47

9-89

|                                 |
|---------------------------------|
| <b>Measured by:</b> <i>mm.L</i> |
| <b>Date:</b> 15/05/13           |

|                              |
|------------------------------|
| <b>Audited by:</b> <i>47</i> |
| <b>Date:</b> 15-05-13        |

|                              |
|------------------------------|
| <b>Preliminary Approval:</b> |
| <b>Date:</b>                 |

| Rev | Date     | Change                                | Revised by | Approved |
|-----|----------|---------------------------------------|------------|----------|
| A   | 04.04.21 | New Issue (P/O D407-667-205)          | KJ/RF      |          |
| B   | 06.03.09 | Dwg Rev updated                       | KJ/JLM     |          |
| C   | 06.03.30 | Tolerance revised for 4.978 dimension | KJ/JLM     |          |
| D   | 07.02.19 | Dwg Rev updated                       | KJ/JLM     |          |
| E   | 09.05.20 | Dwg Rev updated                       | KJ         |          |
| F   | 12.06.04 | Wall thickness form added             | KJ         |          |

| Item | QTY  | PART NUMBER       | DESCRIPTION                       |
|------|------|-------------------|-----------------------------------|
|      | -245 |                   |                                   |
|      | X    | D407-667-245      | CROSSTUBE ASSEMBLY (407 HIGH AFT) |
| 1    | 1    | D6011-115         | CROSSTUBE                         |
| 2    | 2    | D2873-043         | NUT PLATE                         |
| 3    | 2    | D2873-045         | NUT PLATE                         |
| 4    | 1    | D2894-1           | SUPPORT                           |
| 5    | 2    | D3190-1           | CHAFING SHIELD                    |
| 6    | 2    | D3595-063-430     | RUBBER CUSHION                    |
| 7    | 14   | MS20601AD4W8      | RIVET (OR NAS9302B-4-8)           |
| 8    | 4    | MS21920-22        | CLAMP                             |
| 9    | 2    | MS21920-25        | CLAMP (OR MS21920-24)             |
| 10   | AR   | SCOTCH-WELD DP460 | EPOXY ADHESIVE, 3M SCOTCH-WELD    |
| 11   | AR   | PROSEAL 890       | SEALANT                           |

# **GENERAL NOTES:**

- MATERIAL: MANUFACTURED FROM D6011-115  
FINISHED LENGTH = 112.91±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT CROSSTUBE PER DART QSI 005 4.2  
FOR HATCHED AREAS (ZN A6-2), MASK AS REQUIRED  
TO APPLY PRIME AND APPLY CLEAR COAT ONLY
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 27.7 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.  
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3190-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEAL 890 ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS 50 TO 70 DEGREES FROM BOTTOM OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- TORQUE CLAMPS 80 TO 100 IN-LB. TORQUE CLAMPS ON D3190-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

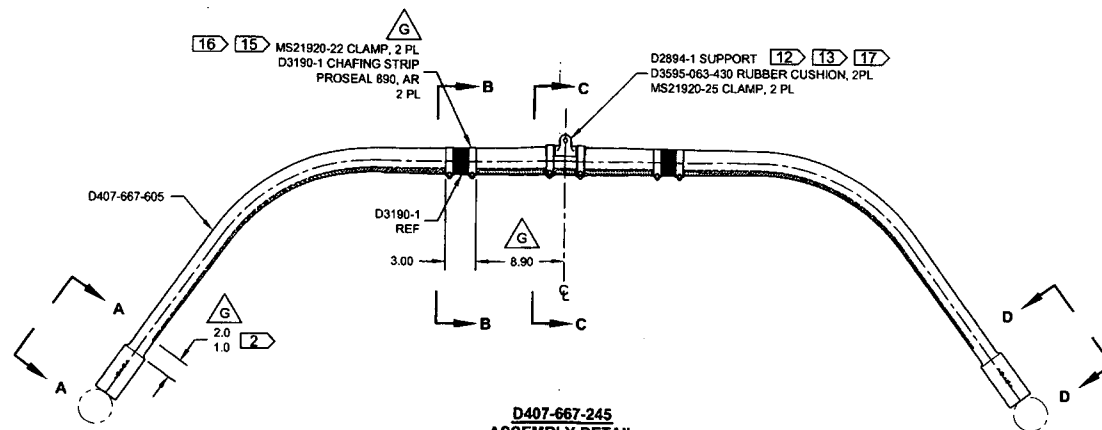
**RELEASED**

2015 APR 09

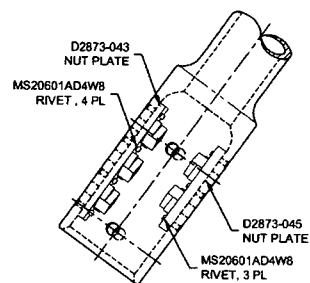
ECN 15-557

|            |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| G          | INCORP. DEO's D407-667-245-F1/F2 (ZN D8-1, A8-1, D5-2, B6-2, C6-2); 8.90 WAS 8.53 (ZN D5-2); TORQUE REDUCED FOR CHAFING SHIELD (ZN A8-1); FINISH REVISED TO ALLOW MANUFAC. FLEXIBILITY (ZN C8-1)                                      | RF                                                                                                                                                                                                                                                                                                                                                                                                                              | 15.03.20 |
| F          | REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 & D2-3)                                                                                             | RF                                                                                                                                                                                                                                                                                                                                                                                                                              | 08.11.06 |
| E          | 8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS.<br>REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR#08-21 AND ECN#1225 | MB                                                                                                                                                                                                                                                                                                                                                                                                                              | 08.07.24 |
| D          | ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION                                                                                                    | PH                                                                                                                                                                                                                                                                                                                                                                                                                              | 07.02.07 |
| C          | ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES                                                                                                                                                                      | PH                                                                                                                                                                                                                                                                                                                                                                                                                              | 05.07.26 |
| B          | ADD CHAFING SHIELD                                                                                                                                                                                                                    | CP                                                                                                                                                                                                                                                                                                                                                                                                                              | 03.05.21 |
| A          | NEW ISSUE                                                                                                                                                                                                                             | CP                                                                                                                                                                                                                                                                                                                                                                                                                              | 02.05.13 |
| REV.       | DESCRIPTION                                                                                                                                                                                                                           | BY                                                                                                                                                                                                                                                                                                                                                                                                                              | DATE     |
| DESIGN     | RF                                                                                                                                                                                                                                    | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA<br>DRAWING NO. D407-667-245<br>SHEET 1 OF 4<br>TITLE CROSSTUBE ASS'Y (407 HIGH AFT)<br>NTS<br>COPYRIGHT © 2002 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |          |
| DRAWN      | RF                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
| CHECKED    | RF                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
| MFG. APPR. | RF                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
| APPROVED   | RF                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
| DE APPR.   | RF                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
| DATE       | 15.03.20                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |

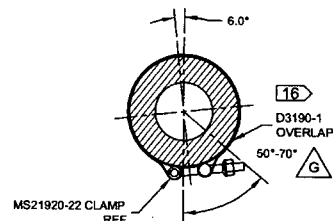




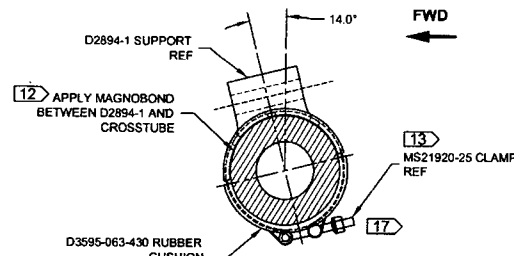
**D407-667-245  
ASSEMBLY DETAIL  
(VIEW LOOKING FWD)**



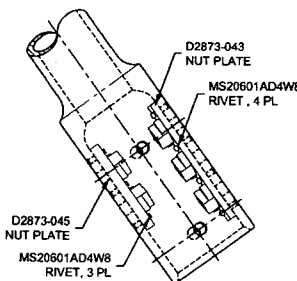
**VIEW A-A CUFF DETAIL  
SCALE 4X**



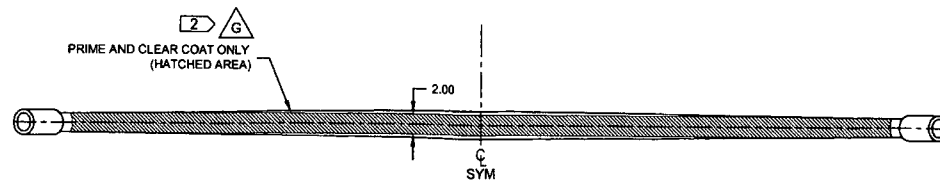
**SECTION B-B  
SCALE 4X, 2PL**



**SECTION C-C  
SCALE 4X**



**VIEW D-D CUFF DETAIL  
SCALE 4X**



**RELEASED**  
2015 APR 09

|            |          |                                                                                                                                                                                                                                                                                          |              |
|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 4P       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                 |              |
| DRAWN      | RF       |                                                                                                                                                                                                                                                                                          |              |
| CHECKED    | 4P       | DRAWING NO.                                                                                                                                                                                                                                                                              | REV. G       |
| MFG. APPR. | 4P       | D407-667-245                                                                                                                                                                                                                                                                             | SHEET 2 OF 4 |
| APPROVED   | 4P       | TITLE                                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   | 4P       | CROSSTUBE ASS'Y (407 HIGH AFT)                                                                                                                                                                                                                                                           | NTS          |
| DATE       | 15.03.20 | <small>COPYRIGHT © 2002 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |              |

8

7

6

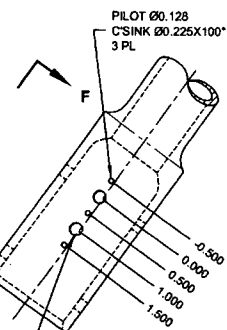
5

4

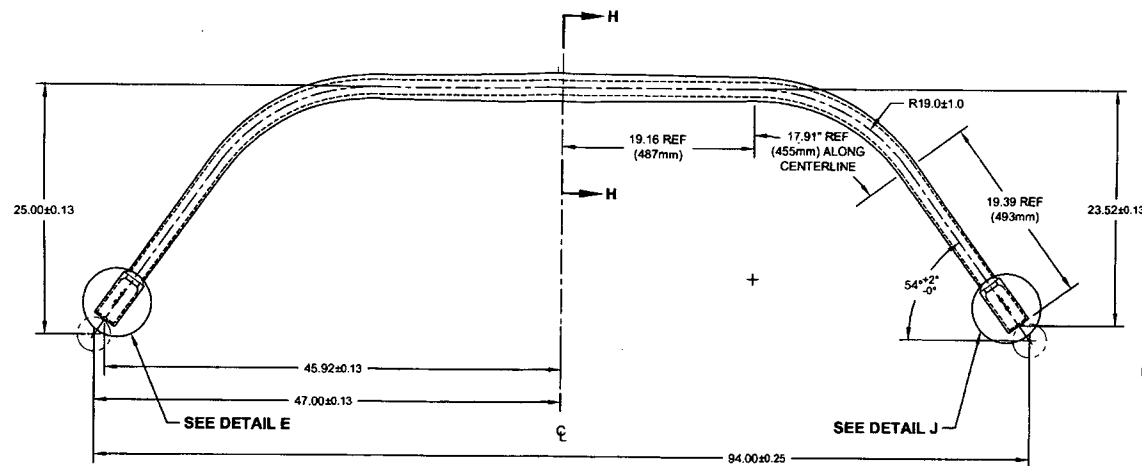
3

2

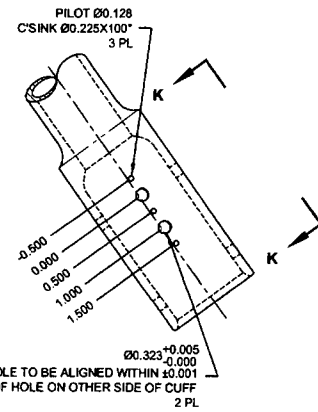
1



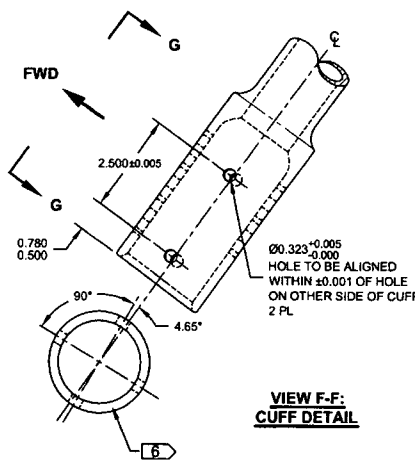
**DETAIL E**  
SCALE 4X  
(VIEW LOOKING FWD)



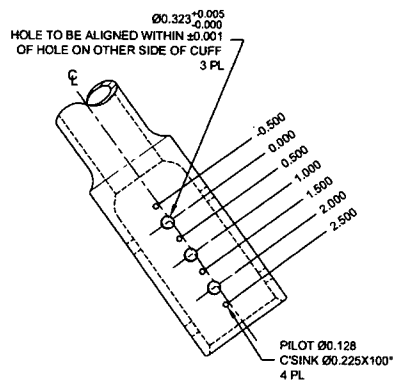
**D407-667-605**  
**BENDING AND DRILLING DETAIL**  
(VIEW LOOKING FWD)



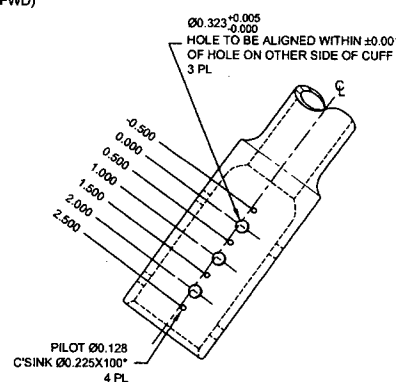
**DETAIL J**  
SCALE 4X  
(VIEW LOOKING FWD)



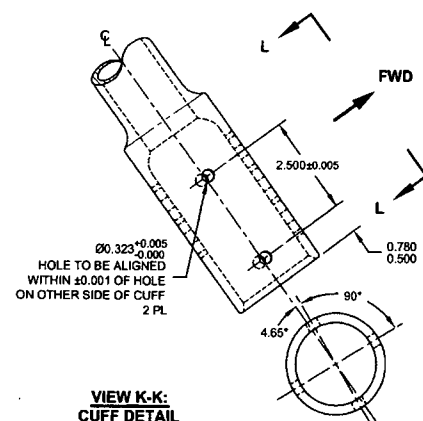
**VIEW F-F:**  
**CUFF DETAIL**



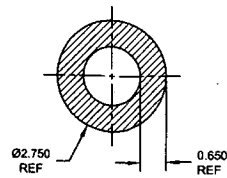
**VIEW G-G**  
(VIEW LOOKING AFT, ROTATED)



**VIEW L-L**  
(VIEW LOOKING AFT, ROTATED)



**VIEW K-K:**  
**CUFF DETAIL**



**SECTION H-H**  
SCALE 4X

**RELEASED**

2015 APR 09

|            |          |
|------------|----------|
| DESIGN     | Q        |
| DRAWN      | RF       |
| CHECKED    | Q        |
| MFG. APPR. | Q        |
| APPROVED   | Q        |
| DE APPR.   | Q        |
| DATE       | 15.03.20 |

**DART AEROSPACE LTD**  
HAWKESBURY, ONTARIO, CANADA

|                                |              |
|--------------------------------|--------------|
| DRAWING NO.                    | REV. G       |
| D407-667-245                   | SHEET 3 OF 4 |
| TITLE                          | SCALE        |
| CROSSTUBE ASS'Y (407 HIGH AFT) | NTS          |

COPYRIGHT © 2002 BY DART AEROSPACE LTD  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

8

7

6

5

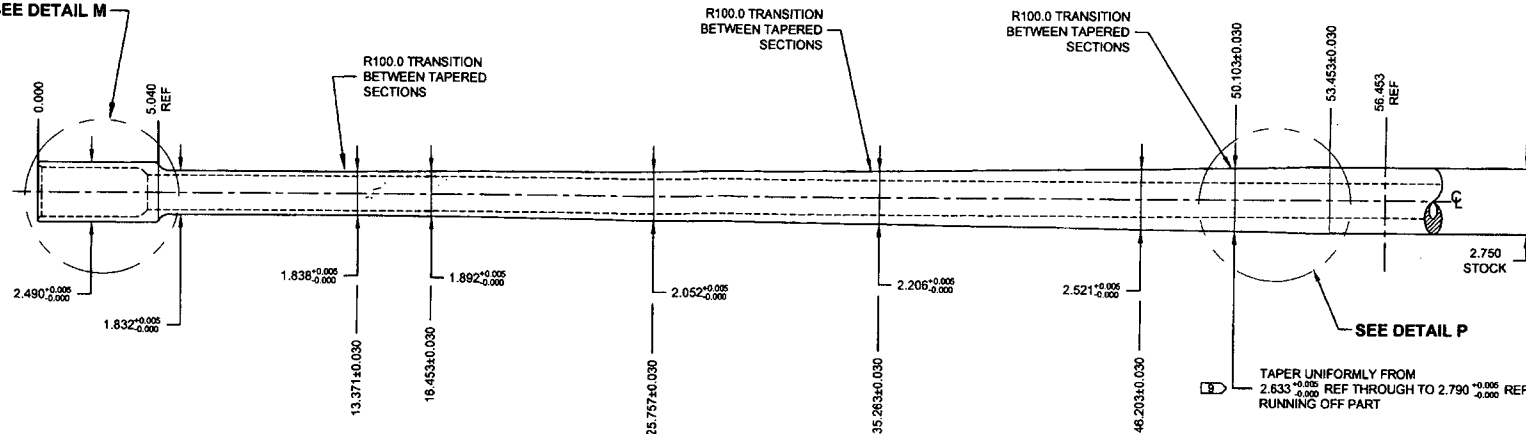
4

3

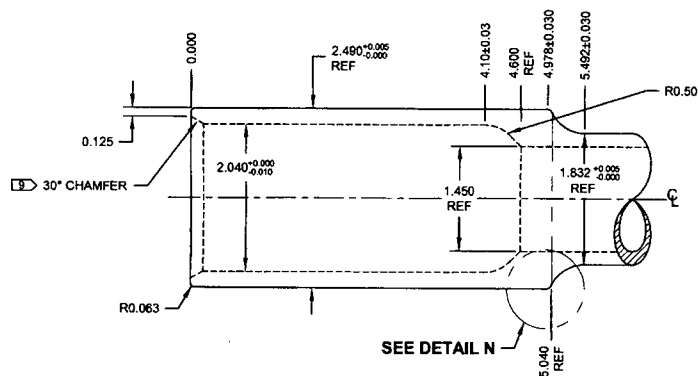
2

1

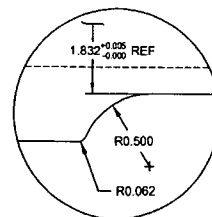
SEE DETAIL M



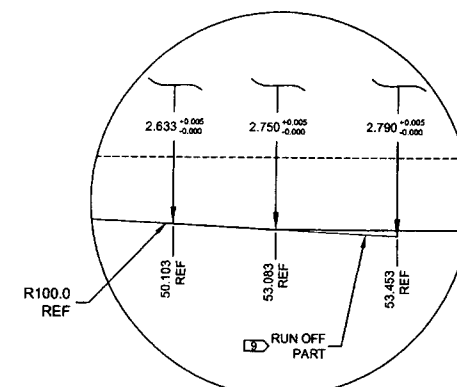
**D407-667-245 MACHINING DETAIL**



**DETAIL M: CROSSTUBE CUFF**  
SCALE 3X



**DETAIL N: CUFF TRANSITION**  
SCALE 2X



**DETAIL P: TAPER RUN-OFF**  
NOT TO SCALE

RELEASED

2015 APR 09

|            |          |                                                                                                                                                                                                                                                                              |              |
|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | q        | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                     |              |
| DRAWN      | RF       |                                                                                                                                                                                                                                                                              |              |
| CHECKED    | q        | DRAWING NO.                                                                                                                                                                                                                                                                  | REV. G       |
| MFG. APPR. | q        | D407-667-245                                                                                                                                                                                                                                                                 | SHEET 4 OF 4 |
| APPROVED   | q        | TITLE                                                                                                                                                                                                                                                                        | SCALE        |
| DE APPR.   | q        | CROSSTUBE ASS'Y (407 HIGH AFT)                                                                                                                                                                                                                                               | NTS          |
| DATE       | 15.03.20 | COPYRIGHT © 2002 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |